

## (57) ABSTRACT

The invention relates to a method and an apparatus for cooling a material to be removed from the grate of a fluidized bed furnace. Material at a high temperature is passed from the grate of the fluidized bed furnace into a fluidized bed cooler in charges of a given size by measuring the quantity of the material accumulating in the fluidized bed cooler. When the quantity of the material in the cooler has reached a predetermined limit value, the supply of material into the fluidized bed cooler is prevented. The charge is cooled in the fluidized bed cooler by fluidization air and via heat transfer into a cooling liquid circulation system and the temperature of the charge is measured. The charge is removed when the temperature of the charge has fallen to a predetermined limit value. The second end (5) of a supply conduit (3) is provided with a supply valve (15) actuated by a power means (16). A discharge conduit (14) is provided with a discharge valve (17) actuated by a second power means (18). Quantity detection means (19, 20) are provided to produce quantity data regarding the amount of material in a fluidized bed space (11), and temperature measuring means (21) are provided to produce temperature data. A control device (22) controls the first power means (16) to open and close the supply valve (15) and the second power means (18) to open and close the discharge valve (17) on the basis of the quantity data and temperature data and the predetermined limit values of quantity and temperature so that the loading of material into the fluidized bed space and its cooling and removal from the fluidized bed space take place in a charge-by-charge and cyclic manner.

(Fig.)